# Theory of everything - reference to relativity and quantum theory 

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## Abstract

Newton's law of gravitation gives very precise results for the radii $r$ and velocities $v$ of an orbit, but they do not give any indication of the diameter of celestial bodies or of the masses of elementary particles. The TOE $[1,2]$, on the other hand, is based on the simplest possible laws, torque and angular momentum for an observer and two objects. All units, $\mathrm{c}, \mathrm{h}$ and G are derived from the details of the earth's radius and day
$h G c^{5} \sqrt{\left(p i^{4}-p i^{2}-1 / p i-1 / p i^{3}\right)}=0.999991 \quad$ and $\quad r=\sqrt{(p i / 2 c T a g)}=6378626 m$. Numerous calculations on the planetary system are given. It explains, among other things, why the moon fits almost exactly into the sun during a solar eclipse. Corresponding calculations for the masses of the elementary particles can be found in Article [1].

All physical laws relating to natural forces have been based on the same principle since Newton
$F=e_{1} e_{2} / r^{a}$ The TOE [1,2], on the other hand, is based on the simplest possible laws. respective ratios, the torques $N_{B} / r_{B}=N_{1} / r_{1}=N_{2} / r_{2}$ and a corresponding formula for the time or frequencies
$N_{B} / w_{B}=N_{1} / w_{1}=N_{2} / w_{2}$, for an observer, object 1 and object 2 , with the respective particle numbers
$N_{1}, N_{2}$ and $N_{B}$. The same laws apply to celestial bodies as to an atom. Elementary particles are also made up of one or more particles. A basic state is only reached when the minimum energy of a system with integer ratios $\mathrm{n}, \mathrm{I}, \mathrm{m}$ is balanced, without higher frequencies which could still be emitted. The advantage to 3 isotropic coordinates is the use of the major semiaxis $\mathbf{r}$, minor semiaxis $\mathbf{x y}$ and deviation $\mathbf{z}$. They enable a clear order according to the quantities $\mathbf{r > x y > z} \mathbf{z}$ and can be made up of rational numbers. Every celestial body and ultimately every object has a conversion factor of 2 pi per revolution for each of the 3 spatial dimensions $2 \mathrm{pi} r \propto w$. With the base 2 pi the 3 dimensions can be combined into a single dimension as a polynomial: $\quad r=r_{1}+2$ pi $x y_{1}+4 \mathrm{pi}^{2} z_{1}$
Polynomials can be treated like orthograde vectors. Every object has the same information in the radii $\mathbf{r}$ as in the frequencies $\mathbf{w}$, if $\mathbf{w}$ is a complex number.

The laws of leverage apply to 3 objects. The factors are independent of each other.

$$
\begin{aligned}
& M_{1,2, p o t}=N_{1}\left(r_{1}+2 \text { pi } x y_{1}+4 \mathrm{pi}^{2} z_{1}\right)+N_{2}\left(r_{2}+2 p i x y_{2}+4 p i^{2} z_{2}\right)+N_{B}\left(r_{B}+2 \text { pi } x y_{B}+4 \mathrm{pi}^{2} z_{B}\right)=0 \\
& L_{1,2, k i n}=N_{1} w_{1}+N_{2} w_{2}+N_{B} w_{B}=0
\end{aligned}
$$

Torque M and angular momentum L are suitable for this formula with N particles. According to the Gaussian integral theorem, what is inside an object is unimportant, regardless of whether it is a solid body or a complex system of center and satellite. The energy can only be calculated when 3 objects interact with the same, smallest center of gravity $=Q$. $Q$ stands for a single quantum $N=1$.

$$
\begin{aligned}
& N_{1} / N_{B}\left(r_{1} / r_{B}+x y_{1} / x y_{B}+z_{1} / z_{B}\right)+N_{2} / N_{B}\left(r_{2} / r_{B}+x y_{2} / x y_{B}+z_{2} / z_{B}\right)=-1-p i-p i^{3} \\
& \left(r_{1}^{2} / r_{B}^{2}+x y_{1}^{2} / x y_{B}^{2}+z_{1}^{2} / z_{B}^{2}\right)+\left(r_{2}^{2} / r_{B}^{2}+x y_{2}^{2} / x y_{B}^{2}+z_{2}^{2} / z_{B}^{2}\right)=-1-p i-p i^{3} \quad Q=-1-p i-p i^{3} \text { see below }
\end{aligned}
$$

Usually the energy for 2 objects is divided with the help of the masses $m$, impulses $p$ and $c$ with the respective relative velocities and leads to the length square of the quadruple impulse.

$$
E^{2}=x^{2} p_{x}^{2} c^{2}+y^{2} p_{y}^{2} c^{2}+z^{2} p_{z}^{2} c^{2}-m^{2} c^{4} \quad \text { But this is only an approximation. Correct and easier to }
$$

continue to involve the observer, he takes over the recoil.
If one uses the particle numbers N for 3 objects, the result is:

$$
\begin{array}{lll}
N_{1} /\left(N_{1}+N_{2}+N_{B}\right)=k & N_{1}=k\left(N_{1}+N_{2}+N_{B}\right) & \\
N_{2} /\left(N_{1}+N_{2}-N_{B}\right)=k & N_{2}=k\left(N_{1}+N_{2}-N_{B}\right) & N_{1}-N_{2}=2 k / N_{B} \\
N_{B} /\left(N_{1}-N_{2}+N_{B}\right)=k & N_{B}=k\left(N_{1}-N_{2}+N_{B}\right) & N_{B}(1-k)=2 k^{2} N
\end{array}
$$

The factors k for $N_{1}$ and $N_{2}$ result accordingly $0=( \pm k)^{2} \pm k / 2-1 / 2$
The solutions are:

$$
k_{1,2}=( \pm 1 / 2 \pm \sqrt{(1 / 4+2)}) / 2= \pm 1 / 4 \pm 1 / 4 \sqrt{(9)}= \pm 1 / 4 \pm 3 / 4 \quad k_{1}= \pm 1 \quad k_{2}= \pm 1 / 2
$$

All equations, regardless of whether it is energy, number of particles, angular momentum and momentum, they are equivalent for a ground state in a closed system.

$$
N_{1} 1 / 2+N_{2} 2 / 3=-2 N_{B} \quad E_{1} 1 / 2+E_{2} 2 / 3=-2 E_{B} \quad w_{1} 1 / 2+w_{2} 2 / 3=-2 w_{B}
$$

The speeds $\quad v_{d, 1}$ and $\quad v_{d, 2}$ are only relative to the observer who has c naturally defined from the number of revolutions $w$ and radius $r^{2}$ on the surface of a body, such as day and earth radius. If you put the radius of the earth's surface at 6378.626 km and the orbit time of one day in this formula, you get the speed of light c with the unit $\mathrm{m}^{\wedge} 2 / \mathrm{c} . \quad c=4 r^{2} w$ If you put in this formula the radius of the earth's surface $6378,626 \mathrm{~km}$ and the orbital time of one day, you get the speed of light $\mathbf{c}$ with the unit $\mathrm{m}^{\wedge} \mathbf{2 / c}$.

$$
r=\sqrt{(p i / 2 c T a g)}=6378626 m
$$

The equatorial radius is $\mathbf{6 . 3 7 8 . 1 3 7} \mathbf{m}$ (GSM 80) with a difference of 489 m . Measuring lengths is a very demanding task. As soon as a ruler is thrown, as with any object, it is subject to the Coriolis force. The natural unit of c with $\mathrm{m}^{2} / \mathrm{s}$ is correct for a single object. Two objects are always required for the energy and are compared with one another. This gives the energy with the unit $c^{2}$.

$$
\begin{align*}
& E_{1,2}=\left(r_{1} v_{1, r}+x y_{1} v_{1, x y}+z_{1} v_{1, z}\right) c+\left(r_{2} v_{2, r}+x y_{2} v_{1, x y}+z_{2} v_{1, z}\right) c=\sqrt{\left(-1-p i-p i^{3}\right)} c^{2}  \tag{1}\\
E_{1,2}= & N_{1} c^{2}+N_{2} c^{2}-1 / N_{B} c^{2}=m_{1} c^{2}+m_{2} c^{2}=E_{1}+E_{2}+E_{\text {interaction }} \quad \text { The mass } \mathrm{m} \text { has }
\end{align*}
$$

naturally no unity, it's just a relationship. The masses result from the interaction or the torque with the earth. Assuming a particle number> 2 alone, the mass is superfluous. The formula for the radius
$r=r_{1}+2 \mathrm{pi} x y_{1}+4 \mathrm{pi}^{2} z_{1}$ is not tied to 3 dimensions. It is only due to our idea of a 3-dimensional space. Photons are entangled / bound particles, consisting of an electron and an anti-electron.

In general, the following applies to every system of 3 objects due to $N_{B} / w_{B}=N_{1} / w_{1}=N_{2} / w_{2}$ :

$$
N_{1} w_{1} /\left(N_{B} w_{B}\right)+N_{2} w_{2} /\left(N_{B} w_{B}\right)=-1 \quad N_{1}^{2}-N_{2}^{2}=N_{B}^{2} \quad w_{1}^{2} / w_{B}^{2}+w_{2}^{2} / w_{B}^{2}=-1 \quad w_{1}^{2}+w_{2}^{2}=-w_{B}^{2}
$$

$w$ is not the frequency f , which is usually assigned to an elementary particle. $\mathbf{f}$ is the frequency of the recoil after emission or absorption and depends on the detector, observer and ultimately the mass of the earth. With the ratios $N_{B} / w_{B}=N_{1} / w_{1}=N_{2} / w_{2}$, the energy surrenders
$E_{1,2}=c^{2} / 2\left(N_{1}-N_{2}\right)=2 c^{2} N_{B}=h f . \quad N_{1}$ is assumed to be the larger object with the greater energy
$E_{1}>E_{2}$. In the photon both matter and antimatter are present at the same time.

$$
N_{\text {Elektron }}=-N_{\text {Antielektron }}=1 \quad w_{1}^{2}>w_{1}^{2} \quad \text { spin }=1
$$

With this the quantum can be calculated.

$$
\begin{equation*}
E_{1,2}=\sqrt{\left(1 \pm p i \pm p i^{3}\right)} c^{2}=\left(N_{1}-N_{2}-N_{B}\right) c^{2}=E_{W}=h f \tag{2}
\end{equation*}
$$

The interaction $\quad E_{W}$ can be taken up in the root at the position of $-p i^{2}$ and results

$$
Q / c^{2}=\sqrt{\left(1 \pm p i \mp p i^{2} \pm p i^{3}\right)} \quad p i c=h f
$$

Only when 2 objects no longer emit energy, regardless of particles, electromagnetic waves or gavitational waves, a basic state is reached in the entire system:

$$
Q / c^{2}=\sqrt{\left(1 \pm p i \pm p i^{3}\right)}
$$

## Gravitational constant

hG can only be calculated relative to the earth. N particles have a volume of $V_{r} \propto N r^{3}$. Not a single particle will occupy the same place after a full revolution of the complete system $\sqrt{\left(1 \pm p i \pm p i^{3}\right)}$ and that is how the relationship arises $V_{N} \propto N p i c^{3}$. With the product G h , the mass is eliminated and the volume is limited to one particle $V \propto p i c^{3}$.

$$
Q / c^{2}=\sqrt{\left(1 \pm p i \pm p i^{3}\right)} \quad G h c^{3} p i \text { Quantum }=G h c^{5} p i \sqrt{\left(1 \pm p i \pm p i^{3}\right)} \approx 1
$$

All quanta have one charge as electron or anti-electron. Gravitation is the difference between the smallest possible distance between two quanta. Two quanta make a graviton. The cohesion corresponds to the interaction of a photon.

$$
\text { Graviton }=\sqrt{\left(1+p i\left(p i+p i^{3}\right)-\left(1+1 / p i+1 / p i^{3}\right)\right)}=\sqrt{\left(p i^{4}+p i^{2}+1 / p i+1 / p i^{3}\right)} \quad \text { This results in: }
$$

$$
h G c^{5} \sqrt{\left(p i^{4}-p i^{2}-1 / p i-1 / p i^{3}\right)}=0.999991 \quad \text { und } \quad r=\sqrt{(p i / 2 c T a g)}=6378626 m
$$

$h, G$ and $c$ form a unit. The units of measurement are defined by these formulas. Each object can be used as the standard of the units of measurement, if any 3 masses are measured, orbital time, diameter and / or number of particles.

The value of G is known only to the fifth digit. In this respect, the result can be assumed to be $1 . \mathrm{h}$ and c are already precisely defined. The only parameter that is still determined by a measurement is G. The orbitant exact calculation of the G-factor of the electron with the quantum field theory, accurate to 10 digits, is conditioned by the unit of $h G c^{5}$. It is a tautology, a mathematical self-reference from one particle or electron to another electron.h, G und c bilden eine Einheit.

The factor $p i^{4}-p i^{2}-1 / p i-1 / p i^{3}$ is a function of dimensions. pi is only conditioned by our consideration of the world with a 3-dimensional space with spheres with a circumference of 1 / pi of the diameter. Nothing can penetrate into the interior of a particle. Everything is a multiple of 1 / pi. This means that the number of particles is independent of the dimensions and the particles are lined up like in a onedimensional chain. In the universe the density of particles in a volume is constant $V \propto r^{d}$. Gravitation can be illustrated as follows. The surface of the earth has a shell one qantum thick. A quantum has a horizontal as well as a vertical area of $p i^{2} .2$ quanta correspond to one graviton. In the vertical direction it is of the particle number $N_{v}$ from the radius of the body on which it is located. The height of the graviton h and is proportional to $1 / N_{v}$, where the upper quantum has the relative height $h_{\text {Graviton , up }}=\left(1+1 / 2 / N_{v}\right)$ and the lower quantum $h_{\text {Graviton ,up }}=\left(1+1 / 2 / N_{v}\right)$. The volume of all quanta is constant and therefore is in the mean $\quad V_{G r a v i t o n} \propto p i^{2}\left(1-1 / 4 / n^{2}\right)$ and corresponds to the square of the distance.

The relationship from space to time is ultimately one-dimensional. The particles $N$ are lined up in a double helix. This is the only force that holds the world together and is based on centrifugal and centripetal forces. 2 objects with 3 dimensions take $3^{\wedge} 2$ parameters plus the total number of particles and equals 10 equations. Formula (1) corresponds to Einstein's ART with 16 equations, only 10 of which are also independent

## HO and gravitational constant

The following applies to a quantum $Q / c^{2}=\sqrt{\left(1 \pm p i \mp p i^{2} \pm p i^{3}\right)} \quad p i c=h f$. For a photon (made up of an electron and an anti-electron) the equation for gravitation can also be formulated differently, with a different factor $2 p i^{2} \sqrt{\left(1-2 / p i^{2}\right)}$ and results in the orthograde component, the speed of light c .
$h G c^{3} 2 p i^{2} \sqrt{\left(1-2 / p i^{2}\right)}=2.13 \cdot 10^{-18} m^{8} / s^{6} p i^{2} \quad$ The value corresponds to $H 0=2.1910^{-18} / s$.
The unit $m^{8} / s^{6} p i^{2}$ is the unit of the mass $c^{2}$ of spacetime / space and describes the curvature of space $p i^{2}$. All interactions are therefore due to the expansion of the universe.

## Calculations on the planetary system

## Earth and moon

With regard to the radii of two bodies $\quad r l /(r l+r 2)=4 / p i \quad$ or $\quad r 2=r l(4 / p i-1)$ is the smallest possible denominator or smallest possible quantum.

## This gives the ratios of the diameter earth / (earth + moon):

Equatorial diameters with 2756.27 km and $3476.2 \mathrm{~km}: 4 / \mathrm{pi} 12756,27 /(12756,27+3476,2)=1.00057$

Pole diameters of 12713.50 km and 3472.0 km Moon with a sphere of equal volume with 3474.2 km :

4/ pi 12713,50/(12713,50 $+3472,0)=1.00011$
$4 /$ pi 12713,50/(12713,50 $+3474,2)=0.99997$

Calculated: Moon radius $=6356.75 \mathrm{~km}(4 / \mathrm{pi}-1)=1736.9 \mathrm{~km}$ based on the pole diameter see above.
This unique relationship between the sun, earth and the first moon in the planetary system explains why the moon fits pretty well into the sun during a solar eclipse. Common objections to this explanation of the solar eclipse are the tidal forces. For the radius and distance, however, only the total energy inside a body
$E=m c^{2}$ is of importance (Gaussian integral theorem). The distances between all bodies can also be the result of the expansion of the universe $H 0=2.1910^{-18} / \mathrm{s}$.

$$
d / d t \text { distance }(\text { Moon })=38,2 \mathrm{~mm} / 384400 \mathrm{~km} / 1 \text { year }=3.1510^{-18} / \mathrm{s} \quad(1-1 / \mathrm{pi}) 3.1510^{-18} / \mathrm{s} \approx H 0
$$

## Planets

In the universe, time $t$ is directly related to the natural numbers. However, time not only gives a phase, but also a radius with the real part, i.e. a spiral. An orbit is an object around a center. The smallest unit of the radius is, after the $1, \mathrm{pi} / 2$. Thus, after the initial time $\mathrm{t}=1$, the natural time $t=e^{(-i p i / 2)}=i^{1 .}$

Ratios of $r$ to $t:$

| $r$ | $t$ |
| :--- | :--- |
| 1 | 0 |
| $-\mathrm{pi} / 2$ | $i$ |
| $-2 p i$ | 1 |

## center

orbit = 2nd center = z-center
radius of the $z$ component with positive direction of rotation
The assumption is that orbites increase by a power of 2pi with one more dimension.

| $3(2 \mathrm{pi})^{\wedge} 2$ | 3 | z-obit $=3$ rd center $=$ xy-center |
| :--- | :--- | :--- |
| $-(2 \mathrm{pi})^{\wedge} 2$ | 4 | Radius of the xy component with positive direction of rotation |
| $(2 \mathrm{pi})^{\wedge}-3$ | 4 | center of r, i.e. the interior of the nucleus |

The ratio pi / 2 (2nd center) to 3 (2pi) ^ 2 (3rd center) is the simplest assumption when a packing of spheres lies in a surface. For another dimension starting from the center, the ratio is $3 / 4$ per dimension. 12 spheres can be grouped around a center.

These criteria are met for Mercury's orbit if the center of the Sun is 696342 km and

$$
\begin{aligned}
& r_{Z}^{2}=696342 \mathrm{~km}^{2}(2 \mathrm{pi})^{3} / 4 \text { is assumed } . \\
& R_{O}^{2}=r_{Z}^{2}(2 \mathrm{pi})^{3} / 4\left(1-\mathrm{pi} / 2-2 \mathrm{pi} i^{t}+3(2 \mathrm{pi})^{2}-(2 \mathrm{pi})^{2} i^{t}\right) \\
& R_{\text {OrbitMerkur }}=696342 \mathrm{~km}(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left(1-(2 \mathrm{pi})(1 / 4+\cos (2 \mathrm{pi} t))+(2 \mathrm{pi})^{2}(3-\cos (2 \mathrm{pi} t))\right)} \\
& \text { Apoapsis }=696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left(1-\mathrm{pi} / 2-2 \mathrm{pi}(1)+3(2 \mathrm{pi})^{2}-(2 \mathrm{pi})^{2}(1)\right)}=46562750 \mathrm{~km} \\
& \text { Periapsis }=696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left(1-\text { pi } / 2-2 \mathrm{pi}(-1)+3(2 \mathrm{pi})^{2}-(2 \mathrm{pi})^{2}(-1)\right)}=70143693 \mathrm{~km}
\end{aligned}
$$

The formula $\quad R_{O}=\sqrt{(a-b \cos (2 t)-c \cos (2 t))}$ can be extracted and converted into a general ellipse with $\quad \cos (2 t)=2 \cos (t)^{2}-1 \quad$ and $\quad \cos (2 t)=1-2 \sin (t)^{2} . R_{O}^{2}=\sin (t)^{2} / c+\cos (t)^{2} / d$

Each of the 3 parameters $\mathrm{r}, \mathrm{xy}$ and z of $E=(r(t) x y(t) z(t))$ is proportional to $\mathrm{t} \mathrm{r}, \mathrm{xy}, \mathrm{z}$ are orthogonal. The energy corresponds to a cube. The diagonals of the cube is $E^{2}=r(t)^{2}+x y(t)^{2}+z(t)^{2} \propto t^{2}$.
The energies of $r, x y$ and $z$ are independent, but the smallest unit of all orbits is a natural number. This corresponds to the 3rd Kepler's law and thus all Newton's laws are also correct. For 2 full revolutions and 3 spatial dimensions, the ratio is:

$$
\begin{equation*}
R_{\text {Orbit }}=r_{\text {Zentrum }} 1 / 2(2 \mathrm{pi})^{(3 / 2)} \sqrt{\text { Quantum }_{n, l, m}} \tag{3}
\end{equation*}
$$

The ratio of the 2 centers pi/2 and $3(2 \mathrm{pi})^{2}$ should largely correspond to the ecliptic.

$$
\sqrt{\left(\arctan \left(p i / 2 /\left(3(2 \mathrm{pi})^{2}\right)\right)\right)} 180 / p i=6.6^{\circ} \quad \text { Measured: Ecliptic: Mercury } 7.0049^{\circ} \text {, Sun } 7.25^{\circ}
$$

Formulas for times of revolution are polynomials with the base 2. Formulas for space coordinates are polynomials with the base 2 pi . In principle, $\mathrm{n}, \mathrm{I}, \mathrm{m}$ can also have negative values. If $\mathrm{n} \mathrm{Im}>0$, this means a movement towards the future, positive energy and matter. If $\mathrm{nIm}<0$, this corresponds to antimatter. According to convention, the sign of $n$ decides between matter and antimatter. The formula generally applies to all possible revolutions. For the energy equation, powers $3^{n} \quad 2^{l}$ and $1^{m}$ are adequate, for the time $t$ multiples of 12 as 2 full revolutions. Since the parameters $n, I, m$ emerged from $N$, rational numbers for I and m are also possible.

For the planetary system, the following equations are based on the QT. The formatting is a little different than in the QT. The energy equation should thus be in the following form:

$$
E=(2 \mathrm{pi})^{2}\left(3^{n}+i^{(-t / n)}\right) \pm(2 \mathrm{pi})\left(2^{l} / 4+i^{(-t / l)}\right)+\left(1^{m}+i^{(-t / m)}\right)
$$

If the imaginary components $i^{\wedge}(t \ldots)$ are added to the mean values, the result is:

$$
E=(2 \mathrm{pi})^{2} 3^{n} \pm(2 \mathrm{pi}) 2^{l} / 4+1
$$

The division in pi / 2 is only important for Mercury and $2^{l}$ can be subsumed as an approximation under $(2 \mathrm{pi})^{2}$.

$$
\begin{aligned}
& E=(2 \mathrm{pi})^{2} 3^{n}+(2 \mathrm{pi}) 2^{l}+1 \quad \text { oder alternativ } \quad E=(2 \mathrm{pi})^{2}\left(3^{n} 2^{l}\right) \\
& R_{\text {Orbit }}=r_{\text {Zentrum }} 1 / 2(2 \mathrm{pi})^{(3 / 2)} \sqrt{\text { Quantum }_{n, l, m}}=r_{\text {Zentrum }} 1 / 2(2 \mathrm{pi})^{(3 / 2)} \sqrt{\left((2 \mathrm{pi})^{2} 3^{n}+(2 \mathrm{pi}) 2^{l}+1\right)} \quad \text { oder } \\
& R_{\text {Orbit }}=r_{\text {Zentrum }} 1 / 2(2 \mathrm{pi})^{(3 / 2)} \sqrt{\left((2 \mathrm{pi})^{2}\left(3^{n} 2^{l}\right)\right)}
\end{aligned}
$$

## Calculation of the orbits in the planetary system

Approximation based on 2 epicycles.

## Mercury

$\mathrm{n}=1 \mathrm{l}=0$

$$
696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left((2 \mathrm{pi})^{2} * 3^{1} * 2^{0}\right)}=59676438
$$

measured: Mercury radius 2439.7 km Apoapsis 46001078 Periapsis 69816921

## Venus

$$
\begin{aligned}
& \mathrm{n}=2 \mathrm{I}=0 \\
& \quad 696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left((2 \mathrm{pi})^{2} * 3^{2} * 2^{0}\right)}=103362622
\end{aligned}
$$

alternatively $696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left(1+(2 \mathrm{pi}) 2^{2}+(2 \mathrm{pi})^{2} 3^{3}\right)}=107096347 \mathrm{~km}$
measured: mean: 108160000 km apoapsis 107412006 km periapsis 108907994 km .
Venus circles concentrically around the center of the Sun / Mercury.

## Earth

n = $2 \mathrm{I}=1$

$$
696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left((2 \mathrm{pi})^{2} * 3^{2} * 2^{1}\right)}=146176822
$$

alternatively:

$$
\begin{aligned}
& 696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left(1+(2 \mathrm{pi}) * 2^{0}+(2 \mathrm{pi})^{2} * 3 * 6\right)}=146924009 \\
& 696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left(1+(2 \mathrm{pi}) * 2^{1}+(2 \mathrm{pi})^{2} * 3 * 6\right)}=147565565 \\
& 696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left(1+(2 \mathrm{pi}) * 2^{2}+(2 \mathrm{pi})^{2} * 3 * 6\right)}=148840382 \\
& 696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left(1+(2 \mathrm{pi}) * 2^{3}+(2 \mathrm{pi})^{2} * 3 * 6\right)}=151357807
\end{aligned}
$$

measured: 149600000 km min 147056800 km max 152143200 km
The difference $151357807-146924009=4433798$ could correspond to an epicyclic that corresponds to the moon. $4433798 / 12=369483$

Starting from the earth, every planet has several moons. The middle term with the base 2 pi is thus split up. Together with $(2 \mathrm{pi})^{\wedge} 2$, this can be simplified by $(2 \mathrm{pi})^{\wedge} 23^{\wedge} \mathrm{n} 2{ }^{\wedge} \mathrm{I}$.

## Mars

$\mathrm{n}=2 \quad \mathrm{I}=2$

$$
696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left((2 \mathrm{pi})^{2} * 3^{2} * 2^{2}\right)}=206725245
$$

$\mathrm{n}=3 \quad \mathrm{I}=1$

$$
696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left((2 \mathrm{pi})^{2} * 3^{3} * 2 * 1\right)}=253185684
$$

measured: apoapsis 206597237 km periapsis 249233162 km 2 moon

## Asteroids

## $\mathrm{n}=2 \mathrm{I}=3$

$$
696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left((2 \mathrm{pi})^{2} * 3^{2} * 2^{3}\right)}=292353645
$$

$\mathrm{n}=3 \quad \mathrm{I}=2 \quad$ The asteroids mark the transition / intersection from 2d to 1d. >> Resonances

$$
696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left((2 \mathrm{pi})^{2} * 3^{3} * 2^{2}\right)}=358058628
$$

$$
n=3 \quad \mathrm{I}=3
$$

$$
696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left((2 \mathrm{pi})^{2} * 3^{3} * 2^{3}\right)}=506371368
$$

Asteroids 2.0 bis $3,4 \mathrm{AE}$ apoapsis 291912774 to periapsis 496251715

```
Jupiter \(n=4 \quad \mathrm{I}=2.5\)
    \(696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left((2 \mathrm{pi})^{2} * 3^{4} * 2^{2.5}\right)}=763525892\)
\(\mathrm{n}=4 \mathrm{I}=3\)
    \(696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left((2 \mathrm{pi})^{2} * 3^{5} * 2^{3}\right)}=877060937\)
apoapsis 740520000 km periapsis 816666400 km
```

Saturn $\quad n=5 \quad 1=3$
$696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left((2 \mathrm{pi})^{2} * 3^{6} * 2^{3}\right)}=1519114104$
apoapsis $=1352533600 \mathrm{~km}$ periapsis $=1514550400 \mathrm{~km}$ 29,457

Uranus $\mathrm{n}=6 \quad \mathrm{I}=3$ minmum
$696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left((2 \mathrm{pi})^{2} * 3^{6} * 2^{3}\right)}=2631182811$
apoapsis 2741270400 km periapsis 3003668800 km
Neptun $n=7 \quad \mathrm{I}=3$
$696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left((2 \mathrm{pi})^{2} * 3^{7} * 2^{3}\right)}=4557345612$
apoapsis 4444466400 km periapsis 4545596000 km

## Kuiper belt

$n=8 \quad l=3.5$

$$
\begin{aligned}
& 696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left((2 \mathrm{pi})^{2} * 3^{8} * 2^{2}\right)}=7893548434 \\
& 696342(2 \mathrm{pi})^{(3 / 2)} / 2 \sqrt{\left((2 \mathrm{pi})^{2} * 3^{8} * 2^{3.5}\right)}=9387063960
\end{aligned}
$$

With $n=3^{\wedge} 3^{\wedge} 3$ the limit of the solar system is largely reached.

## Proportions

Polynomials from 3 factors each result in an entangled object. The products of several 3-way polynomials result in a more complex system. The formula for the size of the moon is part of the formula for the entire solar system.

## Pole radius:

$$
6356,75 /\left((2 \mathrm{pi})^{3}+(2 \mathrm{pi})^{2}+(2 \mathrm{pi})\right)\left(1(2 \mathrm{pi})^{2}-0(2 \mathrm{pi})^{1}+1 /(2 \mathrm{pi})^{0}\right)\left(1+1 /(2 \mathrm{pi})^{3}\right)=1736.8 \mathrm{~km}
$$

## Equatorial radius:

$$
6378,135 /\left((2 \mathrm{pi})^{3}+(2 \mathrm{pi})^{2}+(2 \mathrm{pi})\right)\left(2(2 \mathrm{pi})^{2}-0(2 \mathrm{pi})^{1}+1 /(2 \mathrm{pi})^{0}\right)\left(1+2 /(2 \mathrm{pi})^{4}\right)=1737.9 \mathrm{~km}
$$

Measured: Earth's pole radius: 6356.75 km Equatorial radius: 6378.135 Moon radius $\mathbf{1 7 3 4} \mathbf{~ k m}$

## Mercury orbit / sun ratio

$$
696342 /\left((2 \mathrm{pi})^{3}+(2 \mathrm{pi})^{2}+(2 \mathrm{pi})\right)\left(1+1 /(2 \mathrm{pi})^{2}+1 /(2 \mathrm{pi})^{3}\right)\left(1+1 /(2 \mathrm{pi})^{6}+1 /(2 \mathrm{pi})^{7}\right)=2439.66
$$

Measured: Sun 696342km Mercury 2439.7km

## Martian moons

Mars diameter: equatorial diameter 6792.4 km and pole diameter 6752.4 km :
Phobos: I = 1
$6752.4 \mathrm{~km} /\left((2 \mathrm{pi})^{\wedge} 3+(2 \mathrm{pi})^{\wedge} 2+(2 \mathrm{pi})^{\wedge} 1\right)=\mathbf{2 2 . 9} \mathbf{~ k m}$
Measurement: Phobos (diameter $26.8 \mathrm{~km} \times \mathbf{2 2 . 4} \mathbf{~ k m} \times 18.4 \mathrm{~km}$ )
Deimos: $\mathrm{I}=2$
$6752.4 \mathrm{~km} /\left(2(2 \mathrm{pi})^{\wedge} 3+(2 \mathrm{pi})^{\wedge} 2+(2 \mathrm{pi})^{\wedge} 1\right)=\mathbf{1 2 . 4 6} \mathbf{~ k m}$
Measurement: Deimos (diameter $15.0 \mathrm{~km} \times 12.2 \mathbf{~ k m} \times 10.4 \mathrm{~km}$ )
The pole diameter 6752.4 km from Mars was used as a reference. This should result in the geometric mean of Phobos and Deimos, i.e. about 22.4 km and 12.2 km .

## Summary

The relationship between the units is $h G c^{5} \sqrt{\left(p i^{4}-p i^{2}-1 / p i-1 / p i^{3}\right)}=0.999991$ and $r=\sqrt{(p i / 2 c T a g)}=6378626 m . \mathrm{h}, \mathrm{G}$ and c form a unit. We are in the middle of the potencies $c^{5}$. On the left is the quantum of action. G is the opposite pole to this. We can't find out more. Ultimately, only 3 angular impulses of the spatial coordinates $\mathrm{r}, \mathrm{xy}, \mathrm{z}$ are required for physics. The General relativity and the quantum theory are correct for themselves and their areas of application. If these considerations about the TOE are correct, this would have a clear impact on our ideas of the cosmos.

Examples of calculations of the masses of the elementary ponds can be found in the article "Theory of everything - The Coriolis force explains quantum theory" [2].
[1] Theory of everything - The geometric mean as an alternative to Newton's law of gravitation http://viXra.org/abs/2112.0007
[2]Theory of everything - The Coriolis force explains quantum theory http://viXra.org/abs/2112.0007? ref=13104262

You can find more articles on the TOE and results on the QT, the planetary system and the cosmos on my homepage www.toe-photon.de

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